Insurance Claims Data in Medical Care Price Indexes

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Disclaimer

- The views and opinions are those of the presenters and are not those of the BLS

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Field collection process

- Consumer Expenditure Survey (CE) – expenditure on the different categories of goods and services (entry level items (ELIs))
- CE is also used to select providers
  - Hospitals use data from the American Hospital Association
- Data collectors select items at the provider
- Provider provides price for the identical service in future months

Storm on the horizon?

- Declining response rates in the household surveys
- Declining cooperation among providers
  - Sample sizes decreasing
  - Cost per usable price quote is increasing
- Is the sample truly representative? - services, providers, payers, and geography

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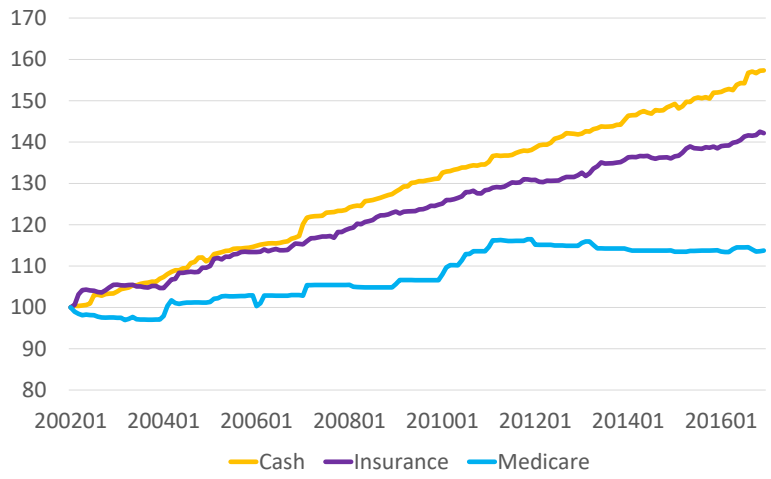
Price growth by payer



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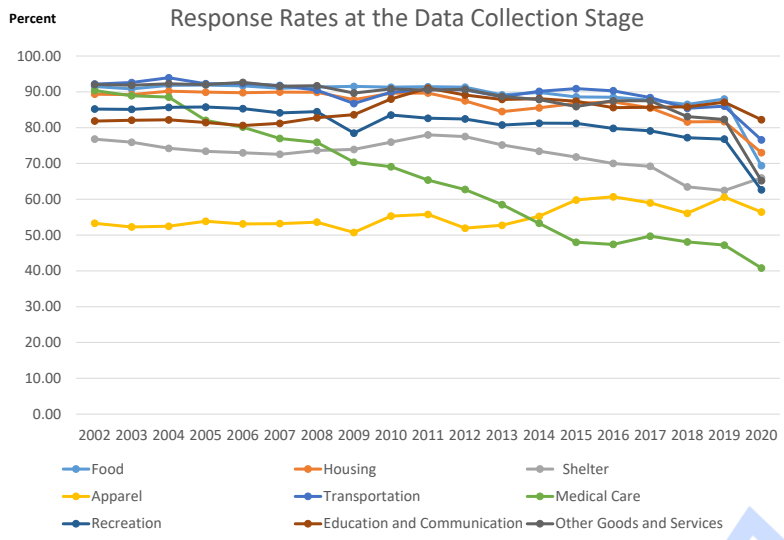
Declining medical response rate



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Challenges of using claims data

- Data lag
- Code changes
- Price variation within an “identical” product
- Only observe price if the service occurs within the month
- Representativeness and implications for manual price collection

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Benefits of using claims data

- Increased sample size
- Improve representation of private insurers in the data
- Potentially reduce collection costs

Medical claims project

- Data from a medical claims data aggregator for all CPI areas
  - Sample 10 hospitals and 200 physicians per area
  - Sample 100 services per hospital and 10 services per physician
  - Physicians – service defined as CPT code
  - Hospitals – service defined as a CPT (outpatient) code or DRG (inpatient)
  - 5 years of monthly prices, and growing
  - Average prices and quantities

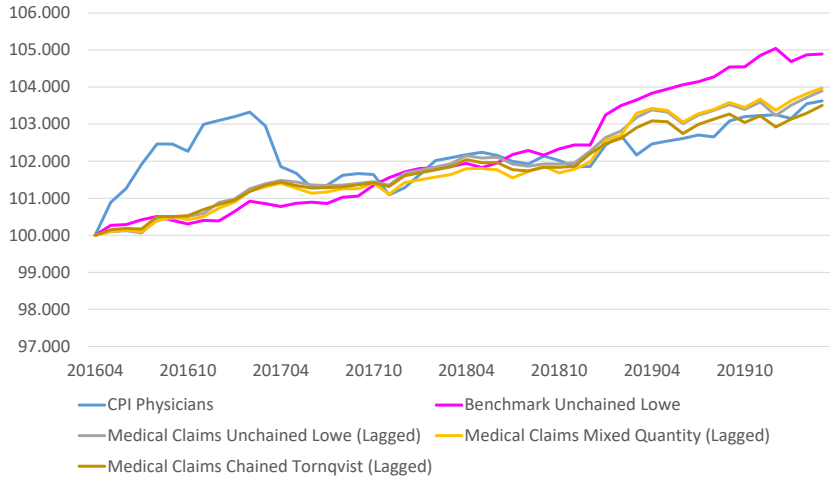
Index methodology

- Formulas
  - Unchained Lowe (Current Year)
  - Mixed Quantity (Previous Year)
  - Chained Tornqvist
- Created insurance only indexes

Comparison

- Compare with the CPI and a benchmark for the same time period
- All Payer index: create all-payer index by combining insurance data with CPI cash and Medicare prices
- Lagged indexes to simulate production counterfactual

Physicians' services



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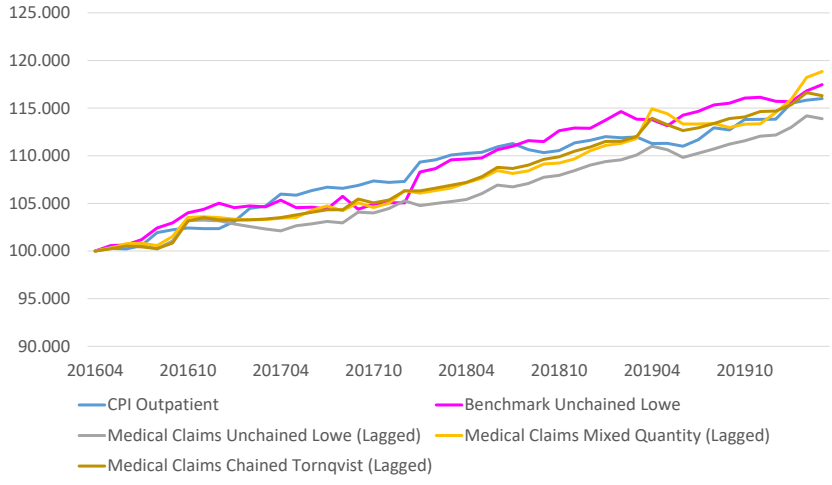
Outpatient hospital services



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Project findings

1. Medical claims data allows the CPI medical care services indexes to use more observations and can increase accuracy
2. Even with a lag, the CPI indexes can be improved by supplementing with medical claims data
3. Different index methodologies provided similar results

Project Recommendation

- Physician's Services
  - Insurance (CPI)
  - Cash (CPI)
  - Medicare (CPI)
- Hospital Services
  - OP Insurance (CPI)
  - IP Insurance (CPI)
  - Cash (CPI)
  - Medicare (CPI)

- Physician's Services
  - Insurance (Replaced)
  - Cash (CPI)
  - Medicare (CPI)
- Hospital Services
  - OP Insurance (Replaced)
  - IP Insurance (CPI)
  - Cash (CPI)
  - Medicare (CPI)

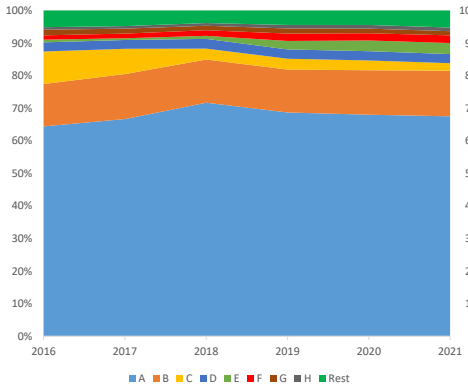
Questions for the Technical Advisory Committee

Question #1

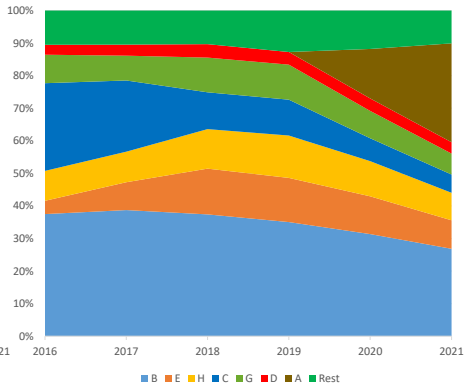
- Does the high concentration of 2-3 insurance companies preclude fully replacing field collection of the insurance data with claims data?
  - Field collection of cash and Medicare transactions, the two other CPI-eligible payers, would continue regardless.
  - CPI isn't aware of research showing that health insurance reimbursements change at different rates.

Insurance concentration

Physicians' Services



Outpatient Services



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60% of covered lives by state

- Does claims represent 60% of covered lives by state?

Threshold Met?	Count	Percent of States
Yes	29	57%
No	22	43%

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Question #1 continued

- Does the high concentration of 2-3 insurance companies preclude fully replacing field collection of the insurance data with claims data?

Question #2

- How should CPI handle/approach the time lag?
  - The claims data is sent to CPI each month, but on a three-month lag
  - This may result in obvious lags in what should be a contemporaneous measure
    - For example, many insurance companies renegotiate contracts with physicians and hospitals in January.

Question #2 continued

- Should the CPI consider a time-lag adjustment?
  - If so, how should CPI approach figuring out what that adjustment would be?
  - Is it possible to incorporate time-lag adjustments in our seasonal adjustments?

Question #2 – Presenter's response

- Complex process on top of complex process
- Accurately predicting medical care prices in reality is very difficult due to large variation in prices
- Using actual prices is better than using predicted prices

Question #3

- When deciding whether to replace field collected insurance data with claims data, what criteria should we consider?
- For example, how should CPI balance competing issues of time lag, representativeness, and CPI survey response rates?

Question #3 – Presenter's response

Advantages

- Accuracy (with lag)
- Number of Observations
- Coverage

Disadvantages

- 3-month lag
  - Communication
  - Measurement Error
- Insurer representativeness

Summary of questions

1. Does the high concentration of 2-3 insurance companies preclude fully replacing field collection of the insurance data with claims data?
2. How should CPI handle/approach the time lag? Should the CPI consider a time-lag adjustment?
3. When deciding whether to replace field collected insurance data with claims data, what criteria should we consider?

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